FEDERAL ELECTION COMMISSION

OFFICE OF INSPECTOR GENERAL

FINAL REPORT

AUDIT OF AGENCY YEAR 2000 RENOVATIONS

As of 3/31/1999

May 1999
AUDIT ASSIGNMENT 98-08

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Executive Summary

The Office of Inspector General initiated and completed a limited-scope audit of the Year 2000 (Y2K) renovation project at the Federal Election Commission (FEC). We conducted our audit to assess the reported progress of the FEC to convert and implement Y2K repairs on its computer systems. Throughout our audit, we regularly updated the Y2K team on project risk that we had identified during our audit fieldwork, and provided specific recommendations to reduce the exposure to the FEC from those risks.

Milestone dates published by the U.S. Office of Management and Budget (OMB) establish progress goals for all Federal agencies. The General Accounting Office (GAO) developed guidelines for use by Federal agencies as a framework for achieving the OMB progress goal of becoming Y2K compliant. We evaluated agency progress using OMB's milestone dates and GAO's methodology. Based on our audit work, we conclude that the Y2K project status as reported by the FEC is consistent with the actual progress achieved. As explained within our audit report, for its internally developed software the FEC has funded for independent verification of Y2K renovations through an outside vendor. We did not validate those renovations. However, our audit does show that there are still major issues to be resolved to fully prepare computer operations at the FEC for the new millennium. Those issues are addressed in the Audit Results section of this report.

The FEC Shows Progress

The FEC has been required by OMB to report twice thus far on the progress of its Y2K renovation project. From information contained in the first FEC Y2K report issued in April 1998, OMB assessed the FEC's Y2K project this way: "*Progress behind schedule. No contingency plan; no IV&V*." By February 1999, the FEC was reporting 100 percent of its mission critical software renovated and tested. However, in its 8th Quarterly Report released in March 1999, OMB expressed concerns similar to those it had earlier:

> *"Making progress on IT systems. The agency is 100% complete in its mission critical software conversion. Anticipated compliance in October. FEC needs a business continuity and contingency plan. The verification and validation plan is weak. FECs payroll and personnel systems will be converted to National Finance Center in October 1999."*

Unresolved Y2K Issues

The Y2K project team has reported repairing over 3,000 software programs consisting of over one million lines of programming code, bringing internally developed computer programs into alignment with government-wide milestone dates. Although the FEC is making progress, the agency's February 1999 Y2K report to OMB indicates that neither contingency planning or independent verification and validation (IV&V) has yet begun. The report goes on to state that the agency's computer hardware, 3rd party software, and

supporting communications network are not yet Y2K compliant. In addition, while system renovation work and program testing has been completed on the agency's most important computer system, other testing has yet to be conducted.

Also, our audit work shows that the FEC has not fully achieved progress required from published OMB directives. For example, a documented inventory of data exchanges with outside parties had not been completed and communications have not been established with each data exchange partner on how to fix the Y2K problem. In addition, the FEC needs to develop a listing of all computer services contracts with outside vendors, and determine whether those contracts comply with Federal regulations requiring Y2K provisions. Furthermore, our audit results show the need for an agency-wide team effort to ensure that the FEC will be able to achieve total Y2K compliance in a timely manner.

Audit Recommendations

Our audit recommendations addressing the issues discussed above are listed individually beginning on the first page of the Audit Results section in this report. They are also contained within the body of the audit report after the detailed discussion of each corresponding issue. Following our audit recommendations, we have incorporated pertinent written comments provided by agency management. Management's response to the draft audit report is included in its entirety as Appendix B. Our subsequent response to management's comments is provided in Appendix C. Finally, our suggestions for improvement to management controls for project planning and reporting metrics has been forwarded to the appropriate agency officials, and included as Appendix D of this report.

Background

Computer systems provide mission critical services for the Federal Election Commission (FEC). These systems enable the news media, research institutions, and the public easy access to information regarding funds raised and spent to influence Federal elections. In addition, mission critical computer systems at the FEC warehouse information necessary to enforce limitations and prohibitions on contributions, process data for the Presidential public funding program, account for government held assets, and maintain personnel and payroll data on employees.

Computer systems that cannot accurately store or properly process the century field are at risk of failing when called upon to manipulate data with a date of January 1, 2000 or later. Computer systems that currently use a two digit date field (i.e. "99" for the year 1999) will not be able to recognize "00" as the year 2000. This problem is largely the result of the high cost of computer memory in the 1960s and 1970s, when programmers adopted a space-saving two-digit programming convention to represent the year. The General Accounting Office (GAO) has identified the Year 2000 (Y2K) problem as a government-wide high risk issue because of the potential impact if Federal systems fail to operate properly.

We conducted our audit to assess whether the reported project status at the FEC matched the agency's actual progress in resolving its Y2K problem. By conducting our audit in accordance with generally accepted government auditing standards, we also evaluated agency compliance with applicable laws and regulations. Based on our audit work, we conclude that the progress reported by the FEC is consistent with actual Y2K project results achieved. As explained within the audit report, for its internally developed software the FEC has funded for independent verification of Y2K renovations through an outside vendor. We did not validate those renovations[1]. However, our audit does show that there are still major issues to be resolved to fully prepare computer operations at the FEC for the new millennium. Those issues are addressed in the Audit Results section of this report. Additionally, our suggestions for improvement of project management are being provided to the FEC in the form of a Management Letter, which is shown in this report as Appendix D.

Federal Milestone Dates

During February 1997, U.S. Office of Management and Budget (OMB) designed an overall Federal strategy and authorized the Chief Information Officer, or a similarly designated official within each of the larger Federal agencies, to direct work and follow industry best practices to resolve the Y2K problem. OMB required each large Federal

[1] As explained by OMB in its 8th Quarterly Report: "Validation involves multiple phases of testing, including a combination of testing of individual components (unit testing), testing of entire systems (integration or systems testing), and in some cases, testing of a string of interdependent systems (end-to-end testing)."

agency to report on their progress, and also established government-wide milestone dates to resolve the Y2K problem, see Exhibit No. 1.[2] These milestones dates provided targets for the completion of the majority of work in each phase of Y2K activities. In January 1998, OMB subsequently revised and accelerated three of the milestone dates.

Exhibit No. 1
OMB Scheduled Milestone Dates

Phase/Work	Milestone Date	Revised Date
Awareness Agency Strategy to be Completed.	**12/96**	**Same**
Assessment		
Inventory and Scope Completed.	**3/97**	**Same**
System Plans and Schedules.	**6/97**	**Same**
Renovation Coding Repairs to be Completed.	**12/98**	**9/98**
Validation Management Sign-off.	**1/99**	**1/99**
Implementation Integrated Testing Completed.	**11/99**	**3/99**

Source: For Milestone Dates and Revised Dates - see Footnote No. 1.

It was not until March 1998 that OMB established reporting requirements for smaller Federal agencies, like the FEC.[3] OMB requested that the smaller agencies report their Y2K status in basically the same format as that published earlier for larger Federal agencies. While OMB did not require quarterly reporting from the smaller agencies, they were directed to report on their Y2K project once at the end of April 1998, and again on May 15, 1999. Subsequently, in its 7th Quarterly Report, OMB accelerated the May 1999 reporting date to February 15, 1999. In its "8th Quarterly Report - Progress on Year 2000

[2] "Getting Federal Computers Ready for 2000," published by OMB, dated February 6, 1997. Subsequently revised in OMB M-98-02, dated January 20, 1998.
[3] "Progress Reports on Fixing Year 2000 Difficulties for Small Agencies," OMB M-98-07, dated March 9, 1998.

Conversion" issued on March 18, 1999, OMB established new reporting requirements affecting each small Federal agency not fully completed in their Y2K renovations. These agencies will now be required to report quarterly to OMB until their work is finished. Accordingly, this means that the FEC will need to submit its next Y2K progress report to OMB on May 15, 1999.

Therefore, the FEC was initially required to only report twice on its Y2K renovation project. However, recognizing the criticality of the Y2K issue, senior management at the FEC choose instead to expand upon the mandatory OMB reporting requirement electing to publish regular Y2K quarterly reports starting with the first report issued on April 30, 1998. Based on the information provided by the FEC in the April 1998 report, OMB assessed the FEC's Y2K project as follows: "*Progress behind schedule. No contingency plan; no IV&V.*"[4] Immediately following the release of each OMB quarterly report, it has been the practice of the U.S. House of Representative Subcommittee on Government Management, Information and Technology to announce its own assessment on the progress reported by each agency and assign grades between 'A' and 'F' based on their progress. After OMB's 5th and 8th Quarterly Reports, the only reports thus far to include the efforts for both small and large Federal agencies, the Congressional Subcommittee chose not to assign grades to smaller agencies, continuing to grade only the large Federal agencies.

In the March 1998 Y2K directive, OMB required small agencies to achieve progress corresponding to the milestone dates which had been established for the large Federal agencies. As can be seen in Exhibit No. 1, three of the milestone dates had already past prior to OMB publishing the March 1998 guidance. In that directive, OMB listed the last three revised milestone dates and then summarily stated, "*The assessment phase should be complete*." Furthermore, two other milestone dates cited in OMB's March 1998 memorandum had already come and gone. One for an inventory of data exchanges with external parties; and the other, to notify each external data provider of the ramifications regarding the Y2K problem.

OMB attached the February 1997 Y2K policy that it had issued earlier for the large Federal agencies as an appendix to the March 1998 directive for small agencies. As part of that policy, OMB stated that its overall strategy is predicated on three basic considerations, the third of which sets forth the following:

> "*Given the limited amount of time, emphasis will be on mission critical systems. In many agencies such systems are large and complex, which means they will require the most time and be the most challenging to fix.*"

[4] "Progress on Year 2000 Conversion, 5th Quarterly Report, issued by OMB, as of May 15, 1998.

Mission Critical Systems

As shown in Exhibit No. 2, the FEC is reporting sixteen computer systems as critical to accomplishing the agency's mission. A mission critical system is defined as any system that, should it fail due to the lack of Y2K readiness, the agency will not be able to perform its stated mission. In addition to identifying the mission critical systems, Exhibit No. 2 also shows the status for each system.

In its strategic plan, the FEC describes its mission this way: *"The ultimate mission of the FEC is to assure that the campaign finance process is open, fully disclosed and fairly enforced, fostering the electorate's faith in the ultimate fairness of the nation's political process.*" Maintaining current and accurate data in its computerized reporting systems is central to the FEC achieving its mission.

Exhibit No. 2
Status of Mission Critical Systems
As Reported by the Federal Election Commission

System	Renovated	Tested	Current Status
Accounting	Yes	Yes	Implemented
Disclosure	Yes	Yes	Implemented
3rd Party Software	No	No	In-Process
Hardware(3rd Party & FEC Owned)	No	No	In-Process
Imaging Micro Updating	Yes	Yes	Implemented
Information	Yes	Yes	Implemented
Mailroom	Yes	Yes	Implemented
Matching Funds Processing	Yes	Yes	Implemented
OGC Tracking	Yes	Yes	Implemented
Open/Closed Minutes Comm. Sec.	Yes	Yes	Implemented
Payroll	Yes	Yes	Implemented
Personnel	Yes	Yes	Implemented
Planning & Management	Yes	Yes	Implemented
Press	Yes	Yes	Implemented
RAD	Yes	Yes	Implemented
Teamlinks /Lotus Notes	Yes	Yes	Implemented

Source: "Report on Year 2K Remediation" The Federal Election Commission, dated February 12, 1999.

The Y2K Project at the FEC Gains Momentum

Documentation shows that the FEC began to recognize the potential impact of the Y2K problem on future operations, in early 1997. For instance, On March 6, 1997 in a transmittal to the Honorable Bob Livingston, Chairman of the House Committee on Appropriations, the FEC provided Chairman Livingston with its Automated Data Processing Strategic Plan for Fiscal Years 1997-2002. In that same transmittal, a cover letter signed by the Chairman of the FEC listed specific agency computerization initiatives requiring future funding considerations. One of these initiatives was the Y2K issue.

Additionally, during 1997 numerous electronic mail messages issued from the Staff Director, continued to alert agency staff at the FEC of the pending Y2K problem. The Staff Director subsequently left the FEC at the end of July 1998. Agency awareness of the problem culminated in the formation of a Y2K project team within the Data Systems Development Division. The team's first initiative was to complete an agency-wide inventory of computer software for "*in-house*" developed programs. This inventory was documented in November 1997, prior to OMB's directive to small agencies.

In December 1998, the Y2K team reported that all in-house developed programming code for systems scheduled to be in operation after January 1, 2000, had been repaired to recognize a four digit century structure. Many of the renovated programs had also been partially or completely tested, and some implemented. During January 1999, the Y2K project team began discussions with outside vendors to obtain independent verification and validation (IV&V) of Y2K renovations.

On February 12, 1999, the FEC issued the second of two mandatory Y2K reports required by OMB, detailing the current status of the agency's Y2K renovation efforts. As previously stated, the FEC is reporting 100% of its mission critical software converted and tested. Based on the information provided by the FEC in its February 1999 report, OMB's 8th Quarterly Report issued during March 1999 summarized the agency's progress as follows:

> *"Making progress on IT systems. The agency is 100% complete in its mission critical software conversion. Anticipated compliance in October. FEC needs a business continuity and contingency plan. The verification and validation plan is weak. FECs payroll and personnel systems will be converted to National Finance Center in October 1999."*

Audit Objective, Scope and Methodology

We conducted our audit to verify the reported progress of the Y2K renovation project at the FEC, and to evaluate compliance with applicable laws and regulations. To accomplish our objectives, we used various methods of data collection including

interviews, surveys, and review of documents. Our audit was not limited solely to evaluating the agency's progress for preparing its mission critical systems, we also performed a cursory review of the agency's overall state of readiness. To obtain a perspective on the adequacy of the FEC's Y2K project we used OMB directives, as well as guidance issued by GAO.

The GAO publication, "Year 2000 Computing Crisis: An Assessment Guide" which was finalized in September 1997, had been released in draft in February 1997, and made available as an added resource for Federal agencies to use in evaluating progress on their Y2K system renovation projects. The GAO guide draws on the work of the CIO Council Subcommittee on Y2K, and incorporates guidance and practices identified by leading organizations in the information technology industry. The GAO guidelines contain five primary phases, each listing key processes that should be accomplished in order to fully complete the phase. The five phases are: Awareness, Assessment, Renovation, Validation, and Implementation. In their Y2K quarterly reports to OMB, the FEC accepted the five phases listed in the GAO guidelines as, the solution framework the agency will use to resolve the Y2K issue. Exhibit No. 1, presents OMB milestone dates for each of the five phases. All Federal agencies should have completed the majority of the work for the last OMB milestone date, by March 1999.

We conducted our survey and fieldwork from December 1998 through March 1999, in accordance with generally accepted government auditing standards. The scope of our audit was agency-wide.

Statement on Management Controls

As part of our audit, we assessed the system of management controls, policies, procedures, and practices applicable to the FEC's management of the Y2K project. Our assessment was performed to determine the level of control risk for determining the nature, extent, and timing of our substantive tests to accomplish our objective.

Due to inherent limitations, a study and evaluation made for the limited scope purposes described above, would not necessarily disclose every material weaknesses or reportable condition. However, we identified reportable conditions and recommended improvements for the on-going management of the Y2K compliance effort. These conditions and their effects are fully described in the Audit Results section of this report, and in the management letter shown as Appendix D.

Audit Results

In February 1998, President Clinton issued an Executive Order which directs the head of each Federal agency to "*assure that efforts to address the Y2K problem receive the highest priority attention in each agency*[5]." Efforts at the FEC in recent months indicate progress in preparing agency computer systems for the new millennium; however, the Y2K project still has not evolved into an agency-wide team effort. During the course of our audit, we regularly briefed FEC officials on audit results and offered suggestions for improvement. Because issues remain to be resolved, we recommend that the FEC:

1. For the inventory of its data exchanges, ensure that the internal and external dependency links between enterprise core business areas, processes, and information systems are documented in detail.

2. Communicate with each external data exchange partner regarding the Y2K issue, and use the agency's WEB site as a means of keeping its public informed on the current status of the Y2K problem.

3. Update and issue the statement of work requiring Y2K compliant technology for the product and services covered under the ADP contract, complete work on the agency's internal network, and perform end-to-end testing using FEC data to ensure that the communications network is fully Y2K compliant.

4. In future Y2K reports issued to OMB, the FEC should include the computerized communications network as a mission critical system and ensure that the total number of mission critical systems reported conforms with OMB instructions.

5. Develop adequate contingency plans for the communications network. In addition, we suggest that the FEC instruct each of its program offices with a high level core business function to submit contingency plans, so that the plans can be evaluated and tested prior to January 1, 2000.

6. The FEC FAXLINE System provides an important public service; therefore, we recommend that the FEC perform end-to-end Y2K testing of that system to ensure an uninterrupted continuation of service.

7. Develop and issue the statement of work to obtain services for independent verification of Y2K renovations.

8. Conduct meetings with each division/office to reassess the number of mission critical systems, as well as the level of verification obtained through user acceptance testing. If user acceptance testing is to be relied upon as reported by the FEC, develop a

[5] "Executive Order on Year 2000 Conversion" dated February 4, 1998.

testing environment so system users can properly verify Y2K renovations and system performance.

9. Prepare a listing of all agency computer technology contracts, and review those contracts to ensure that the appropriate Y2K language has been included in order to comply with existing Federal regulations.

Assessing Project Risk

In order to keep abreast of events relating to the Y2K renovation effort at the FEC, in early 1998 the Office of Inspector General (OIG) began requesting information on the status of the agency's Y2K project. By the fall of 1998, the OIG changed from being a passive observer to taking a more active role through monitoring reported progress in the Y2K renovation project. Our monitoring efforts included assessing by comparison, the Y2K quarterly reports submitted by the FEC to OMB, and providing management with the results of our analysis. To assist the FEC further in preparing computer systems for the new millennium, the OIG subsequently became one part of a two prong approach for independent verification and validation (IV&V) of agency-wide Y2K renovations. Initially, we had offered our services to assist with independent validation of system testing; however, in December 1998 the FEC granted the Y2K project manager funding authority to obtain IV&V services from an outside vendor. Consequently, the agreed upon role of the OIG would be to determine whether the progress reported by the FEC matched its overall state of readiness. We placed special emphasis on two priority areas: 1) systems that provide and receive electronic data from outside parties, and 2) core business functions that rely on computer processed data.

As reported by OMB, the Clinton Administration is committed to ensuring that the Y2K problem does not interfere with the services that the American people rely on. Therefore, during our audit we identified systems, assigning the highest priority to those systems which transfer data to the public and systems that receive electronic data from outside sources. Although most of the core business functions within the agency rely heavily on computer processed data, we specifically identified six internal processes that either transfer and/or receive electronic data from sources outside the FEC. These six processes are: 1) the electronic filing process used by external parties for campaign finance reporting, 2) public access through the Direct Access and State Access Programs, 3) electronic data received by the Audit Division, including the Presidential public funding program, 4) the communications network which transfers the data and also provides for Internet access, 5) electronic transfer of accounting and payroll data, and 6) forms, schedules, and other documentation provided to the public through electronic data transfer. Our audit assessed the risk associated with the Y2K renovation of the computer systems within these critical areas, and we offer recommendations which we feel will reduce the agency's exposure to the Y2K problem.

Risk is inherent in any renovation project. One common technique used to assess risk in a system development or renovation project is to analyze diagrams that chart the flow of electronic data through the system. OMB previously asked each Federal agency, having any data exchange with outside sources, to inventory those exchanges. In its directive to small Federal agencies issued in March 1998, OMB established a goal of February 1, 1998 for completing that data exchange inventory, and March 1, 1998 to communicate with each exchange partner regarding the Y2K problem.[6] While the Y2K project team had completed an inventory of the agency's internally developed software programs; upon our request they were unable to provide a documented inventory of external data exchanges or any corresponding data flow diagrams. To address interface and data exchange issues in its "Year 2000 Computing Crisis: An Assessment Guide" published in September 1997, the GAO recommends "*developing a model showing the internal and external dependency links between enterprise core business areas, processes, and information systems.*" Similar to OMB's directives, the GAO guidelines also recommend "*notification of all outside data exchange entities*" as well as "*the need for data bridges and filters.*"[7]

Even when all internal computer systems at the FEC are Y2K renovated, without effective prevention efforts there is always a risk that data received from external providers which has been processed, summarized, and transferred from a system not Y2K compliant might populate internal systems with corrupt data. In order to block transfer of non-compliant data, an industry practice is to develop and install front-end filters and system edit checks. Where to install filters and edit checks capable of protecting agency computer systems without unnecessarily restricting the transfer of data, can be determined from locating and identifying date fields. In addition, the proper placement of sender notification procedures, such as electronic error messaging with standby instructions can be determined by analyzing data flow.

Audit Recommendation No. 1: We recommend that for the inventory of its data exchanges, the FEC ensure that the internal and external dependency links between enterprise core business areas, processes, and information systems are documented in detail.

Management's Comments to Audit Recommendation No. 1: *"All data exchanges, both inside and outside have been inventoried and mapped."*

OIG Response to Management's Comments for Audit Recommendation No. 1: The OIG considers management in agreement with the recommendation and have taken steps to implement corrective action.

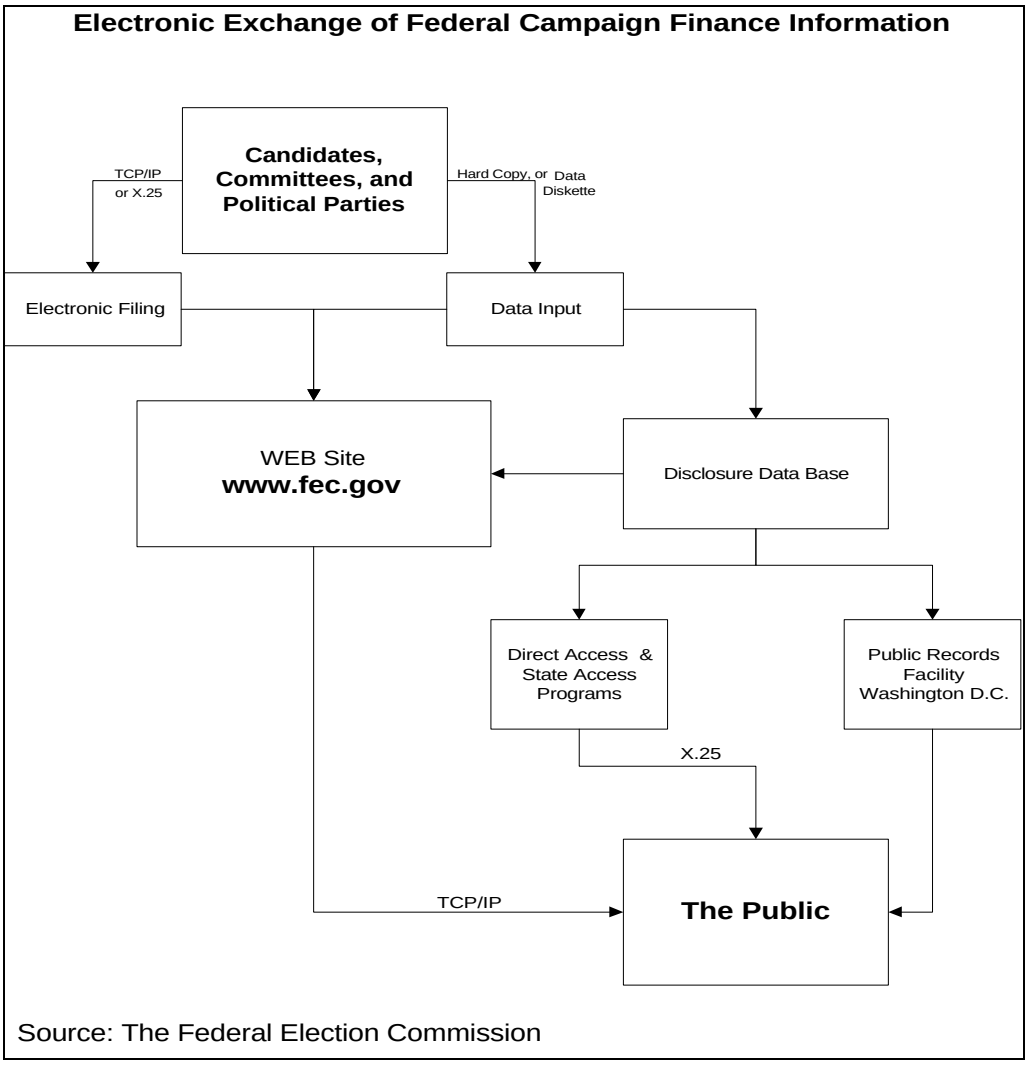
[6] "Progress Reports on Fixing Year 2000 Difficulties for Small Agencies," OMB Memorandum for the Heads of Selected Agencies, dated March 9, 1998.

[7] A data bridge is essentially software code that will transform electronic source data into a compatible format acceptable to the receiving program or system.

Campaign Finance Disclosure System Overview

The Disclosure System, appropriately named since it discloses campaign finance reports to the public, receives electronic data from outside sources. Developed in-house by agency programming staff, the Disclosure System is a complex mix of hardware platforms and software programs comprised of many different computer languages. It is the primary repository for millions of campaign finance records received each year from candidates, political committees, and political parties participating in Federal elections. The Disclosure System is capable of both receiving and transmitting electronic data through either a dedicated modem using the telecommunications medium (X.25), or via Internet protocol (TCP/IP).

Exhibit No. 3



Candidates and committees submit campaign finance information either through an electronic filing process, by data diskette, or in document form. As part of our audit program, we conducted interviews with agency staff and constructed a data flow diagram

for disclosure of campaign finance information (see Exhibit No. 3). The FEC provides campaign finance information free of charge on the WEB. In addition, the public has free access to this information at the Public Records Facility at offices located in Washington, DC. Users requiring more detailed information about candidates, parties, and political action committees either subscribe on-line to the Direct Access Program, or in the case of State election offices obtain free access through the State Access Program.

Data from the electronic filing process is submitted directly into either the agency's WEB site or the Disclosure Data Base. The electronic filing software available from the FEC was built Y2K complaint. According to the FEC, during January 1999 the Y2K renovated version of the Disclosure Data Base scheduled to be in operation in the year 2000, has been fully implemented along with both the Direct Access and State Access Programs.

Fully Y2K compliant is defined by the Federal Acquisition Regulations as information technology that, "accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time with it[8]."

Although the FEC is currently reporting the Disclosure System as completely converted, tested, and implemented; it does not operate independently. For example, without a Y2K compliant communications system, the FEC will not be able to conduct "end-to-end" system testing to ensure full Y2K compliance, as defined by Federal regulations. The communications network in conjunction with end-to-end testing are discussed later in this report. In addition, data filters and bridges will need to be tested to ensure that only Y2K compliant data is permitted to integrate with the Disclosure System and the agency's WEB site.

The Presidential Public Funding Program

The Audit Division evaluates the matching fund submissions of Presidential candidates and determines the amount of contributions that may be matched with Federal funds. Federal regulations require that for any data submitted for the Presidential public funding program which is generated directly or indirectly from computerized files or records, the candidate shall submit a copy of the contributor list on magnetic media.[9] The FEC has established and published filing format specifications for the data sent via magnetic tape.[10] The date fields in the current version of the specifications are shown in a six digit format (YY/MM/DD). According to staff within the Audit Division, the documentation is scheduled to be updated prior to the 2000 Presidential election cycle. Data received by the Audit Division for the Presidential public funding program is first reviewed by agency

[8] "Federal Acquisition Regulation; Year 2000 Compliance", dated August 22, 1997.
[9] Title 11, of the Code of Federal Regulations (CFR), section 9036.1(b)(2).
[10] "Financial Control and Compliance Manual, For Presidential Primary Candidates Receiving Public Financing." Federal Election Commission, dated January 1996.

staff before it is ever integrated into an internal computer system. This substantially reduces the risk that non-compliant Y2K data will inadvertently be input into an agency database.

However, the Audit Division also gathers information from candidates, committees, and political parties selected for an examination of their campaign finance activities. This information may be received on magnetic tape, or on data diskette, or as a flat file sent through the Internet. Audit staff we interviewed were unaware of any established communications to notify data exchange partners of the potential problems to either themselves or the FEC, if non-compliant Y2K date fields are transferred.

The FEC Needs Y2K Outreach Program

As previously stated, in March 1998 OMB established milestone dates for every small Federal agency to communicate with each of their external data exchange partners regarding the Y2K problem. During calendar year 2000, thousands of candidates, committees, and political parties will be eligible to exchange electronic data with the FEC. The Office of Election Administration (OEA) at the FEC does assist state and local election officials by responding to inquiries, publishing research and conducting workshops on all matters related to election administration. In addition, the OEA briefs foreign delegations on the U.S. election process, including voter registration. In this capacity, OEA has designed into their outreach program notification to all 50 State election officials of the potential risk involved in running unverified automated elections systems in the year 2000.

However, agency outreach efforts to date have not included notification to all eligible external data providers of the potential consequences of sending non-compliant electronic data to the FEC. In its April 1998 Y2K quarterly report to OMB, the FEC stated that it originally intended "*to begin alerting its customer base starting in June 1998, of the format changes and the implementation schedule*." The report also stated that the FEC would use the mail to contact all subscribers using the Direct Access Program, after that program was fully implemented on January 1, 1999. In discussions with the Y2K project team during January 1999, the project manager stated that the FEC no longer intends to contact its customer base regarding issues specific to the Y2K problem. According to the Y2K project manager, this change of policy is due partly to the fact that the FEC electronic filing software was developed Y2K compliant and is made available free of charge. In addition, although electronic filers do not have to use the FEC developed software, those that acquire custom designed programs must first be individually validated before they can send electronic data to the FEC. Electronic filers are provided with filing formats as well as a password. Therefore the FEC concludes, it is not necessary to notify each eligible electronic filer of issues relating specifically to the Y2K problem, and the issue was dropped from the February 1999 Y2K report to OMB.

We believe that this logic runs contrary to the Y2K directive issued by OMB requiring all Federal agencies to establish communications with each external data partner regarding the Y2K issue, no later than March 1, 1998. First of all, electronic filers are not the agency's only data exchange partners. Also, in order to successfully exchange electronic data between two computer systems, there must be a similar file format; or if not, at least a software bridge to accommodate dissimilar formats. Second, no system administrator is going to allow an outside entity to exchange data without obtaining proper access rights. Therefore, for the electronic filing process, the FEC is simply following standard procedures required under normal operating conditions, and not communicating with each data exchange partner on how to fix the Y2K problem, as requested by OMB.

As shown previously in Exhibit No. 3, the FEC maintains an Internet WEB site. In addition to providing public access to Federal campaign information, this site provides a host of general information relating to the FEC. This information includes instructions on electronic filing in order to assist software developers and programmers when converting existing programs to conform to the electronic filing system. Early in our audit, we suggested to the Y2K project team that the WEB site could be used to keep the agency's public current regarding the Y2K problem.

Audit Recommendation No. 2: We recommend that the FEC communicate with each external data exchange partner regarding the Y2K issue, and use the agency's WEB site as a means of keeping its public informed on the current status of the Y2K problem.

Management's Comments to Audit Recommendation No. 2: *"…we have communicated guidance on the Website and in the Direct Access Program login header. Additionally, we will contact those known entities who are involved in providing software to the electronic filing community and alert them to this requirement."*

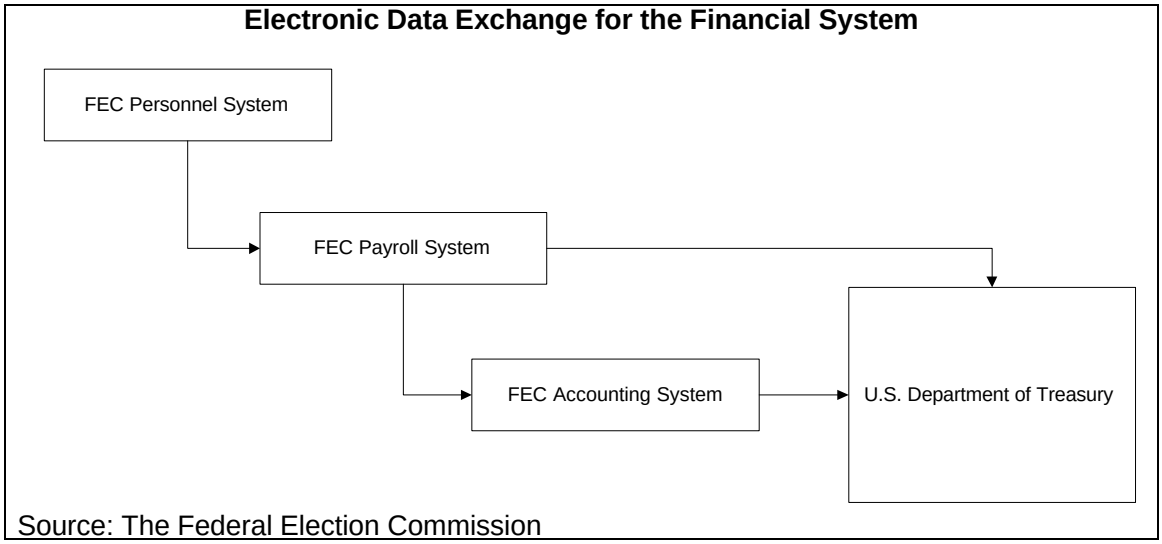
OIG Response to Management's Comments for Audit Recommendation No. 2: The OIG considers management in agreement with the recommendation and have taken steps to implement corrective action.

Financial System Overview

Computer systems at the FEC maintain and process personnel and accounting data for an agency staff of over 300 full-time employees, and a budget of more than $30 million. The financial system is essentially composed of three integrated computerized systems: personnel, payroll, and accounting.

The flow of electronic information within the financial system starts with the personnel system which transfers data to the payroll system. From the payroll system, data is then sent to the accounting system. Both accounting and payroll data is subsequently transferred to the U.S. Department of Treasury (Treasury). This simple flow of information is shown in Exhibit No. 4.

Exhibit No. 4



Currently, the financial system receives no electronic data from sources outside of the FEC. The data exchange with Treasury is accomplished through system software supplied to the FEC by the Treasury. The data exchange process to Treasury begins with FEC staff downloading accounting and payroll data onto a data diskette; manually transferring the diskette to a desktop computer; uploading the data into the Treasury supplied software; and completing the transfer.

The FEC intends to outsource both the personnel and payroll systems to the National Finance Center (NFC). In its August 1998 quarterly report to OMB, the FEC stated that the transfer of the two systems would not be completed until at least October of 1999. The FEC had hoped to migrate these two systems to the NFC much earlier, but the transfer was delayed due to the NFC dealing with its own Y2K problems. Because of the risk associated with the late transfer of these two systems, the FEC decided to go ahead and renovate both systems. Consequently, each individual component of the financial system has now been Y2K renovated. However, these integrated systems also use the communication network, and as discussed below that system is not fully Y2K compliant.

Communications Network Not Fully Compliant

As reported by the FEC, its telecommunications fall into two major categories: 1) communications associated with the telephone system, and 2) communications associated with computer data. This latter grouping is further sub-divided into communications provided through an ADP contractor, communication services provided by an electronic filing contractor, and the internal communications network operated and maintained by the agency's information technology staff. While the electronic filing contractor is reporting their services as Y2K compliant, the current ADP contract has no provisions requiring the vendor to be compliant; furthermore, the contract is scheduled to expire during June 1999.

In addition, while the Y2K project team is in the process of renovating the internal data communications environment, work remains to be done.

As part of our audit fieldwork, we reviewed the ADP services contract. Products and services provided through the ADP contractor include Internet services, as well as communication software and computer hardware. The statement of work for the current contract was issued on November 9, 1992, with vendor proposals due by February 1, 1993. After detailed evaluation of each vendor response, the contract was subsequently awarded on June 3, 1993. It took approximately eight months to award the 1993 contract, which did not include the time required to develop the statement of work prior to its issuance. The contract was awarded for services to cover a 72 month period, with the agency having an automatic "right of extension" of vendor supplied products and services to the 78th month. This could extend the contract on a month-to-month basis at the option of the FEC through December 1999. While the Y2K project manager anticipates awarding a contract proposal during 1999 for communication services similar to those provided under the 1993 contract including provisions for the vendor to demonstrate the product and services, to date there has been no statement of work issued for a new contract.

In its February 1999 Y2K report to OMB, the FEC states: *"Although the ADP contractor is responsible for a major application, whether or not they are Y2K compliant at this juncture is not relevant.*" However, in its publication, "Year 2000 Crisis: A Testing Guide" issued in November 1998 the GAO takes a diametrically opposite position, as follows:

> "*In order to execute end-to-end testing and ensure that all systems in the chain of support to core business areas function as intended, the telecommunications infrastructure that interconnects the systems must be compliant and ready for testing. Ensuring that the vendor-supported components of the telecommunications infrastructure are compliant is a process that should have begun as part of establishing the test infrastructure. By now this process should have been completed for all telecommunications systems.*"

In its March 1998 "Memorandum to the Heads of Small Agencies," OMB stated: *"All Federal agencies must be prepared to make a smooth transition through the year 2000."* Late delivery of a Y2K compliant communications network presents a substantial risk for resolving the agency's Y2K problem. Not only may there not be enough time for the agency to adequately test vendor products and services, but also mandatory end-to-end testing of systems which exchange or transfer data through the network may not be completed in time. In its "Year 2000 Computing Crisis: An Assessment Guide," GAO states: "*The purpose of end-to-end testing is to verify that a defined set of interrelated systems, which collectively support an organizational core business area or function, interoperate as intended in an operational environment (either actual or simulated).*" Late renovation of the FEC's communication network could mean that end-to-end testing

of Y2K renovations will be delayed; or worse, not done at all. Therefore, it is essential to formulate an immediate strategy to address this critical issue.

Audit Recommendation No. 3: We recommend that the FEC update and issue the statement of work requiring Y2K compliant technology for the product and services covered under the ADP contract, complete work on the agency's internal network, and perform end-to-end testing using FEC data to ensure that the communications network is fully Y2K compliant.

Management's Comments to Audit Recommendation No. 3: *"The CBD Notice for RFP9902 (Information Technology) was issued on April 13, 1999. The RFP is expected to be available April 26, 1999 with an estimated award date of late August. Complete implementation, including 30 day minimum parallel and Y2K testing is expected to be accomplished by November 30, 1999."*

OIG Response to Management's Comments for Audit Recommendation No. 3: Of special concern in management's response is the uncertainty surrounding the scheduled late implementation of the Information Technology contract (commonly referred to as the "ADP contract"), which provides computer services for / between the FEC and the central computer facility housing the Disclosure Database. As stated, agency officials only expect Y2K testing on that contract to be accomplished by November 30, 1999. This is much later than established government-wide milestone dates and presents a significant risk to the FEC.

Inconsistency in Reporting Total Mission Critical Systems

For OMB reporting purposes, the FEC does not currently include the communications network in the count for total mission critical systems. Yet, the FEC describes the communications system as a "*major application*" in its February 1999 Y2K report. OMB has published guidelines recommending that agency computer systems be classified as either mission critical or non-mission critical. OMB has consistently requested that agency's provide a status on the total number of mission critical systems, so that the Administration can issue accurate progress reports on fixing the Y2K problem in Federal systems to the American people.

In addition, OMB has requested that mission critical systems be reported as compliant; or if not compliant, classified as being replaced, repaired, or retired. In its February 1999 Y2K report to OMB, the FEC is reporting the total number of mission critical systems as sixteen, yet the number of mission critical systems listed within the report as compliant, replaced, repaired, and retired actually adds up to a total of eighteen systems. This inconsistency, as depicted in the following table taken from the February 1999 FEC Y2K report, has caused some confusion.

Total number of Mission-Critical Systems	Number Compliant	Number to be Replaced	Number to be Repaired	Number to be Retired
16	14	3	1	0

In its March 1998 directive entitled "Memorandum to the Heads of Small Agencies" OMB requests that, "*For this table, the four right-hand columns ("Number Compliant," "Number Being Replaced," "Number Being Repaired," "and Number Being Retired") must add up to the left-hand column ("Total Number of Mission-Critical Systems").*" Consequently, in its most recent quarterly report, OMB has identified the FEC as having eighteen mission critical systems; when in fact, the FEC is only currently reporting sixteen mission critical systems. In that report, OMB issued new reporting requirements asking each small Federal agency that has not fully completed their Y2K renovation work, to begin reporting quarterly to OMB on their progress[11]. This means that the FEC will need to issue its next Y2K progress report to OMB on May 15, 1999.

Audit Recommendation No. 4: We recommend that in future Y2K reports issued to OMB, the FEC include the computerized communications network as a mission critical system and ensure that the total number of mission critical systems reported conforms with OMB instructions.

Management's Comments to Audit Recommendation No. 4: *"With regards to FEC owned internal communications equipment, the FEC will make every effort to ensure Y2K compliance."*

OIG Response to Management's Comments for Audit Recommendation No. 4: Management states that every effort will be made to ensure the FEC owned internal communications equipment is Y2K compliant. However, management's comments are non-responsive to our recommendation to include the computerized communications network as a mission critical system and ensure that the total number of mission critical systems reported conforms with OMB instructions.

The FEC Needs Contingency Planning

Contingency plans ensure the continuity of core business processes. Theoretically with adequate contingency planning a mission critical system could fail, yet the FEC would still be able to accomplish its mission. On the other hand, without a well designed contingency plan the failure of the one major system, such as the agency's communications network, could disrupt operations for the entire organization. During 1998, OMB asked each Federal agency to identify all mission critical systems not expected to be fully Y2K compliant by March 1999, and also report the date that a corresponding contingency plan

[11] "8th Quarterly Report: Progress on Year 2000 Conversion," issued by OMB on March 18, 1999.

would be in place. The FEC has reported that it is still in the process of both renovating its own data communications environment and ensuring that the ADP communications contract is compliant. Additionally, OMB has repeatedly requested that contingency plans for high-level core business functions be completed and tested.[12] In its February 1999 Y2K quarterly report to OMB, the FEC simply states, "*During the remaining months of calendar year 1999, the FEC will develop a contingency plan for the remote possibility that the computer systems become inoperable.*" In its 8th Quarterly Report issued during March 1999, OMB expressed the following concerns regarding the FEC's Y2K project:

> *"Making progress on IT systems. The agency is 100% complete in its mission critical software conversion. Anticipated compliance in October. FEC needs a business continuity and contingency plan. The verification and validation plan is weak. FECs payroll and personnel systems will be converted to National Finance Center in October 1999."*

Audit Recommendation No. 5: We recommend that the FEC develop adequate contingency plans for its communications network. In addition, we suggest that the FEC instruct each of its program offices with a high level core business function to submit contingency plans, so that the plans can be evaluated and tested prior to January 1, 2000.

Management's Comments to Audit Recommendation No. 5: *"For the communications network, the FEC will review its current procedures for addressing a communications network failure. A contingency plan will be developed to address such a failure in the event it should occur. Preliminary discussions regarding this issue have been held. A formal plan is scheduled to be developed."*

OIG Response to Management's Comments for Audit Recommendation No. 5: In regards to management's comments on contingency planning, it is noted that the FEC has held preliminary discussions regarding this issue and a formal plan is scheduled to be developed; however, recent OMB testimony before Congress indicates that all Federal agencies are expected to submit business continuity and contingency plans by June 15, 1999. Therefore, we believe that the FEC should strongly consider the contributions and suggestions offered in Finding Number 1, of our Management Letter shown in Appendix D of this report. These suggestions include using an electronic supplied version of a benchmark comprehensive Y2K plan as the foundation for developing an FEC-wide team effort for contingency planning and staff involvement.

[12] "Revised Reporting Guidance on Year 2000 Efforts" OMB M-99-09, Memorandum for the Heads of Selected Agencies, dated January 26, 1999.

FEC FAXLINE System Not Scheduled for Y2K Testing

The Public Disclosure Division processes incoming campaign finance reports from political committees and candidates involved in Federal elections, and makes those reports available to the public in paper form, on microfilm, and through digital computer images. The division also manages the FEC FAXLINE System, an automated faxing service which transfers electronic information to the public. The FEC FAXLINE System has over 440 documents and publications available for immediate transmission. Materials available through this service include the forms necessary to report Federal campaign finance activities. In each of its quarterly reports assessing the progress of Y2K renovations in the Federal sector, OMB has stated that the Clinton Administration is committed to ensuring that the American people will continue to receive the services they rely on and government services will not be disrupted by the transition to the year 2000.

During February 1999, the Public Disclosure Division implemented a new FEC FAXLINE System that was developed Y2K compliant and is supported through a contract with an outside vendor. The system consists primarily of a host computer installed with supporting software, and a twelve hour back-up power unit. The FEC FAXLINE System is not connected directly to the FEC communications network, instead data is delivered through eight dedicated phone lines. The FEC FAXLINE System also maintains a dedicated diagnostic phone line used by the vendor to troubleshoot the system. According to the Y2K project team, no plan is being considered to have the FEC FAXLINE System tested from end-to-end specifically for Y2K compliance. When interviewed, the Y2K project manager maintains that the only risk to the public is to have an invalid time stamp placed on the document received. Without end-to-end testing to include the supporting telecommunications infrastructures, the full consequences will remain unknown.

Audit Recommendation No 6: The FEC FAXLINE System provides an important public service; therefore, we recommend that the FEC perform end-to-end Y2K testing of that system to ensure an uninterrupted continuation of service.

Management's Comments to Audit Recommendation No. 6: *"We agree that the FAXLine should be tested, and that the system should be communicated directly to the public records office."*

OIG Response to Management's Comments for Audit Recommendation No. 6: The OIG considers management in agreement with the recommendation and will take steps to implement corrective action.

Independent Verification of Y2K Renovations Needed

OMB has asked each Federal agency "*to assure independent verification that systems are fixed and to assure that information reported is accurate.*"[13] During December 1998, the Y2K project team and the OIG entered into a cooperative agreement for verification and validation of agency-wide Y2K renovations. The agency's plan would consist of a two prong approach: 1) the agency would contract with an outside vendor for verification of Y2K renovations, and 2) the OIG would compare the agency's reported progress to its actual state of readiness with particular emphasis placed on mission critical systems that exchange data electronically with the public. It was not until December 1998 that the FEC granted the Y2K project manager the funding authority to obtain IV&V services from an outside vendor. Although the Y2K project team continues in discussions with potential vendors, the FEC still has not awarded a contract for IV&V testing of agency-wide Y2K renovations.

In the first paragraph of its February 1999 Y2K report to OMB, the FEC asserts that "*100% of the FEC's mission critical software has now been renovated and tested.*" If the reader did not scrutinize the report further, we believe that this statement by itself might lead the reader to an invalid conclusion that progress in the renovation and testing effort has reached a level, which in fact has not been achieved. For instance, as explained later in the body of the February 1999 Y2K report, while system testing has been completed on the Disclosure System, other testing has yet to be concluded. In addition, testing of computer hardware and 3rd party software remain, both systems are listed as mission critical. It should be noted that additional software renovations along with system testing may be necessary as a result of feedback received from the proposed IV&V process. Also as described next, our audit results show that user acceptance testing has fallen far short of the expected outcome. Without immediate action, there is a risk that that the FEC will not be able to validate and verify Y2K renovations and testing in time.

Audit Recommendation No. 7: We recommend that the FEC develop and issue the statement of work to obtain services for independent verification of Y2K renovations.

Management's Comments to Audit Recommendation No. 7: *"Your recommendation…was implemented April 19, 1999 via a contract with SEEC, Inc. In order to ensure independent verification, validation will be accomplished at the vendor site."*

OIG Response to Management's Comments for Audit Recommendation No. 7: The OIG considers management in agreement with the recommendation and is taking appropriate steps to implement the recommendation. While verification of code at the vendor's site provides a degree of assurance that due diligence was performed by the

[13] "Revised Reporting Guidance on Year 2000 Efforts" OMB-M-98-12, Memorandum for the Heads of Selected Agencies, dated July 22, 1998.

agency in repairing programming code; it should also be pointed out that the vendor usually will not attest to the level of compliance. Consequently, the method recommended by both OMB and the GAO to ensure code compliance, as well as the reliability of other Y2K renovations including computer hardware and communication software, is through end-to-end testing of each system.

User Acceptance Testing Not Meeting Expectations

During our early discussions with the Y2K project team, we were informed that the FEC was relying on user testing to verify Y2K renovations after the converted systems were implemented. The GAO guidelines define acceptance testing as the process, "*to verify that the complete system (i.e., the full complement of application software running on the target hardware and systems software infrastructure) satisfies specified requirements (functional, performance, and security) and is acceptable to end users.*"[14] In both the August 1998 and February 1999 Y2K reports and using almost identical wording, the FEC states: "*By bringing each program on-line as it is repaired or converted we utilize the best testing environment available, the actual user of the programs.*" While the normal operating environment may provide assurance that Y2K changes have not introduced errors to adversely affect the functionality of a particular computer program; without structured technical assistance there can be no guarantee that critical future dates will actually be tested by the users of the system. In addition, GAO guidelines recommend that initial acceptance testing be part of the validation phase, prior to implementation of the renovated system.[15] To determine whether the user environment provided assurance that Y2K renovations were complete and adequate, we surveyed the users of each mission critical computer system reported by the FEC as implemented.

During February 1999, we sent a user survey (see Appendix A) to each of the twelve divisions/offices responsible for the sixteen reported mission critical systems, so that we could determine the effectiveness of user acceptance testing. Except for computer hardware and 3rd party software applications, the FEC is currently reporting all other mission critical computer systems as fully Y2K renovated and in operation. Of the fourteen mission critical systems reported by the FEC as completely renovated and implemented, only a single system was reported as receiving a thorough user acceptance test. Nine divisions/offices reported either performing no user acceptance testing, or only incidental testing as a by-product of routine operations. One of the division/offices responded that their system was not yet Y2K compliant. One office did not respond to our survey.

It was evident from the survey results, users have not received adequate technical assistance to perform acceptance testing. In addition, some divisions/offices listed by the FEC as having responsibility for a mission critical system were not sure whether they

[14] "Year 2000 Computing Crisis: A Testing Guide" GAO, dated November 1998.
[15] "Year 2000 Computing Crisis: An Assessment Guide" GAO, dated September 1997.

operated a mission critical system, or not. Furthermore, the responses from two divisions/offices indicated that they didn't have a mission critical system.

Audit Recommendation No. 8: We recommend that the Y2K project team conduct meetings with each division/office to reassess the number of mission critical systems, as well as the level of verification obtained through user acceptance testing. If user acceptance testing is to be relied upon as reported by the FEC, develop a testing environment so system users can properly verify Y2K renovations and system performance.

Management's Comments to Audit Recommendation No. 8: *"In order to complete the remediation of computer programs at the FEC, the following steps occurred:*

1) *Programs were copied*
2) *Those copied programs were replaced, remediated or retired*
3) *Updated programs were fully tested and put back into operation*

Based on the above, the FEC has completed 100% of all programs identified as mission critical per our most recent OMB report."

OIG Response to Management's Comments for Audit Recommendation No. 8: Management's comments do not address our recommendation. We recommend that the Y2K project team conduct meetings with each division/office to reassess the number of mission critical systems, as well as the level of verification obtained through user acceptance testing. In addition, if user acceptance testing is to be relied upon as reported by the FEC, management should develop a testing environment so system users can properly verify Y2K renovations and system performance.

Compliance with Laws and Regulations

As previously stated, according to Federal regulations all Federal agencies have been directed to notify each contractor providing essential computer services of policies established to ensure Y2K compliance. Those regulations require that all Federal contractors either provide Y2K compliant technology, or ensure that non-compliant technology is upgraded to become Y2K compliant in a timely manner.[16] During our interviews with FEC staff, we determined that agency computer services contracts may not have been reviewed to ensure that the appropriate Y2K provisions were included. Early in our audit, we provided the agency's Y2K project team with the recommended contract language developed by the Federal government. As part of our audit fieldwork, we scheduled a comprehensive review of computer technology contracts in order to determine the level of compliance with applicable Federal regulations. However, upon our request in March 1999, the FEC was still unable to provide a listing of the contracts with the vendors that supply computer services to the agency. Without being able to identify

[16]Title 48 of the Code of Federal Regulations (CFR), part 39.106 "Year 2000 compliance," dated August 7, 1997.

every computer services contract, the FEC cannot ensure that each of its vendors has been notified to provide only Y2K compliant technology.

Audit Recommendation No. 9: We recommend that the FEC prepare a listing of all computer technology contracts, and evaluate those contracts to ensure that the appropriate Y2K language has been included to comply with Federal regulations.

Management's Comments to Audit Recommendation No. 9: *"Data Systems has identified computer contracts to the Contracting Officer. We suggest that you communicate directly with the Contracting Officer regarding this particular issue. We will notify them* (current contractors with contracts through 2001) *however specifically of this requirement. In conclusion, current contracts are Y2K compliant."*

OIG Response to Management's Comments for Audit Recommendation No. 9: Management suggest that the OIG communicate directly with operational staff in order to resolve the audit recommendation. While we believe our recommendations and suggestions would enhance the agency's Y2K renovation effort, the OIG is constrained by Federal law from directing FEC operations. Guidance on the scope of the OIG can be obtained from Public Law 95-452, as amended by Title 1 of the Inspector General Act Amendments, Public Law 100-504. Furthermore, management's suggestion raises concerns whether the appointed project officials have the authority to coordinate agency-wide Y2K renovation efforts. Centralized planning and direction is crucial for large and complex agency-wide projects i.e., resolving the FEC's Y2K problem.

Conclusion

Clearly, the FEC has much to accomplish in the months ahead in order to prepare its computer systems for the new millennium. As previously stated, the FEC is reporting all internally developed mission critical software as converted and tested. Feedback from the agency's proposed IV&V contract with an outside vendor should indicate the adequacy of this conversion effort. Yet, successful renovation of in-house developed software is only part of the total Y2K project, significant though it may be. The areas addressed within this audit report pose a substantial risk to the agency, if not properly resolved. Furthermore, in a letter to management we express additional concerns that the FEC has neither developed a comprehensive Y2K plan to support project management, nor has the Y2K project team documented their efforts converting the in-house developed software (see Appendix D). Without immediate resolution, we believe these two conditions will only increase the exposure of the FEC to the Y2K problem.

Audit Survey of Year 2000 Renovations
User Acceptance Testing For Critical Computer Systems

Department Name:

Name of Responding Official:
(Note: Please Respond No Later Than February 26, 1999)

Name(s) of the Reported Mission Critical Computer Systems in Your Department:
(Note: If you are unaware of a mission critical computer system within your area, please respond by indicating such, and return your reply c/o: Dorothy Maddox-Holland, Office of Inspector General. If you do not know the name of your system, use the name(s) as shown in the table presented at the end of this survey)

Question No. 1:

(a) Is the reported mission critical computer system(s) in your area of responsibility Y2K compliant? (Yes or No, or Don't Know)

(b) Has the Y2K compliant version been fully implemented (placed into operation)?
(Yes or No, or Don't Know)

If Yes to both (a) and (b) for any system, please identify the system(s) as both compliant and implemented, and go to Question No. 2.

If No or Don't Know for either (a) or (b) for any system, you don't need to respond further for that particular system. Please identify the system(s) and its current status, if known. If you have only one known mission critical system, and answered No or Don't Know to either (a) or (b), after you identify that system you are finished with the survey. Please return your response c/o: Dorothy Maddox-Holland, Office of Inspector General. Thank you!

Question No. 2:

Did your department perform user acceptance testing of Y2K renovations for the mission critical computer system(s) in your area of responsibility after implementation? (Yes or No)

If your answer to Question #2 is No for a system, identify each system and go to question No. 3.

If your answer to Question No. 2 is Yes for a system, please list that system and answer the following three questions before going to Question No. 3:

a) Were scripts prepared for users to follow to test the system's Y2K renovations? (Yes or No) If Yes, please provide a copy of the test scripts along with your response to the survey.

b) Were unexpected test results logged? (Yes or No) If Yes, please provide a copy of the exception report along with your response to the survey.

c) From the list of four system components below, please indicate each that you tested in conjunction with the mission critical system software:

1) application software,
2) hardware,
3) firmware,
4) communications network.

Question No. 3:

Did user department management review and approve the system's performance after conversion for Y2K renovations? (Yes or No)

Please identify any system and indicate either Yes or No for that system.

Mission Critical Computer Systems Reported by FEC
Y2K Quarterly Report to OMB, August 1998

System	Program Office
Accounting	Administration Division
Disclosure	Data Systems Development
External Source Programs	Data Systems Development
Hardware	Data Systems Development
Imaging Micro Updating	Public Disclosure Division
Information	Information Division
Mailroom	Administration Division
Matching Funds Processing	Audit Division
OGC Tracking	Office of General Counsel
Open/Closed Minutes Comm. Sec.	Secretary of the Commission
Payroll	Administration Division
Personnel	Administration Division
Planning & Management	Planning and Management
Press	Press Office
RAD	Reports Analysis Division
Teamlinks /Lotus Notes	Data Systems Development

- - - - - - - - - - - End of Survey - - - - - - - - - - -

FEDERAL ELECTION COMMISSION
WASHINGTON, D.C. 20463

MEMORANDUM

TO: Steven B. Lachenmyer
Office of the Inspector General

FROM Richard L. Hooper
Director, Data Systems Development

SUBJECT: Draft Report "Audit of Agency Year 2000 Renovations, as of March 1999"

DATE: April 21, 1999

This memorandum is in response to your request for written review and comments on the recommendations contained in the OIG's Draft Report entitled "Audit of Agency Year 2000 Renovations, as of March 1999."

General

Whereas many of the items contained in the report may refer to valid recommendations, we find the overall memorandum to be questionable in what we would hope would be its intended purpose of helping the FEC to achieve Y2K compliance.

The report largely focuses on items which may be immaterial to the task of implementing agency wide Y2K compliance. Unlike larger Agencies, the FEC does not have the personnel resources to perform many of the recommendations outlined in the report. Furthermore, any diversion of the Y2K team from completing its scheduled Y2K duties in order to implement all of the recommendations in the report might ultimately lead to a less than successful effort. We do appreciate some of the points in the draft report, and will consider them as detailed below.

Page 1

Recommendations

Responses to the individual recommendations contained in the report are provided below. OIG recommendations are indicated in *"italics."*

"Inventory all data exchanges, especially those with outside entities and map the access path of date fields to ensure among other things, that adequate data filters and system edit checks are installed at each critical point."

All data exchanges, both inside and outside have been inventoried and mapped.

Data exchanges for the purpose of answering this recommendation specifically for outside entities have been classified into three categories:

1) Data received by the FEC from outside entities.

   a) Electronic Filers

      Notification has been provided on the Web site, and through the distribution of the electronic filing vendor toolkit indicating the proper Y2K date format for electronic submission of data.

2) Data received by outside entities from the FEC.

   These are read only systems with no data exchanged (no data input, only streamed data output).

   a) Internet Users

      Notification has been provided on the Website.

   b) Direct Access Program Users

      The following notification has been provided in the direct access header transmitted to the user at the time of login:

      "IN THE DATA AVAILABLE FOR DOWNLOAD WE HAVE EXPANDED THE YEAR FIELD FROM 2 TO 4 CHARACTERS IN ORDER TO COMPLY WITH THE YEAR 2000 STANDARDS"

3) Interactive data exchange (to/from) outside entities.

a) Treasury

The Treasury is the only entity with which true data exchange occurs. We have corresponded with them in writing (copy available upon request) regarding Y2K compliance and requirements.

"Communicate with each external data exchange partner regarding the Y2K issue, and post guidance on the WEB site to alert parties eligible to use the electronic filing process of the risks associated with transferring non-compliant Y2K data to the FEC."

As referred to in the response to the first recommendation above, we have communicated guidance on the Website and in the Direct Access Program login header. The following special alert appears on the Web to parties eligible to use the electronic filing process:

reference: http://www.fec.gov/elecfil/new/electron.htm

"ELECTRONIC FILERS NOT USING FECFILE SHOULD BE CERTAIN TO FOLLOW THE FORMAT GUIDELINES WITH REGARDS TO PREPARING AND SUBMITTING DATE FIELDS. DATE FIELDS NOT PREPARED IN ACCORDANCE WITH Y2K FORMAT GUIDELINES WILL CAUSE YOUR FILING TO BE REJECTED."

Additionally, we will contact those known entities who are involved in providing software to the electronic filing community and alert them to this requirement.

"Immediately update and issue the statement of work for the telecommunication contract, to include requiring the vendor to perform end-to-end testing using FEC data to ensure that the network is fully Y2K compliant."

The CBD Notice for RFP9902 (Information Technology) was issued on April 13, 1999 The RFP is expected to be available April 26, 1999 with an estimated award date of late August. Complete implementation, including 30 day minimum parallel and Y2K testing is expected to be accomplished by November 30, 1999.

"Include the computerized communications network in the reporting control total for mission critical systems."

With regards to FEC owned internal communications equipment, the FEC will make every effort to ensure Y2K compliance. With respect to external communication networks, such as FTS2000 and/or the Internet, it is beyond the scope and ability of the FEC to validate Y2K compliance.

"Develop adequate contingency plans for the communications network; in addition we also suggest that the FEC direct each division to submit contingency plans if they rely on data processed through any computer systems, or rely on any system that transfers data electronically."

For the communications network, the FEC will review its current procedures for addressing a communications network failure. A contingency plan will be developed to address such a failure in the event it should occur. Preliminary discussions regarding this issue have been held. A formal plan is scheduled to be developed.

The suggestion that each FEC division submit contingency plans is duly noted.

"The FAXline provides an important public service; therefore, we recommend that the FEC perform end-to-end Y2K testing of that system to ensure an uninterrupted continuation of service."

We agree that the FAXLine should be tested, and that the system should be communicated directly to the public records office.

"Identify agency requirements, and issue the statement of work to obtain services for independent verification of Y2K renovations."

Your recommendation which resulted from our discussions with you earlier this year wherein we explained the importance of conducting an independent verification and validation of Y2K code compliance was implemented April 19, 1999 via a contract with SEEC, Inc. In order to ensure independent verification, validation will be accomplished at the vendor site.

"Conduct meetings with each division/office to accurately assess the number of mission critical systems, the level of verification obtained through user acceptance testing, and where necessary develop structured test scripts for the system users to follow in order to verify Y2K recommendations and system performance."

In order to complete the remediation of computer programs created at the FEC, the following steps occurred:

1) Programs were copied
2) Those copied programs were replaced, remediated, or retired
3) Updated programs were fully tested and put back into operation

Based on the above, the FEC has completed 100% of all programs identified as mission critical per our most recent OMB report.

"Prepare a listing of all agency computer technology contracts, and review each contract to ensure that the appropriate Y2K language has been included in order to comply with existing Federal regulations."

Data System has identified computer contracts to the Contracting Officer. We suggest that you communicate directly with the Contracting Officer regarding this particular issue.

It should be noted that the SDR electronic filing contract covers a period through 9/30/2001. This contract requires operations and maintenance through that period. Other contracts with Aristotle and Gnossos contain similar provisions. By virtue of providing maintenance through 2001, those contractors have agreed to be compliant. We will notify them however specifically of this requirement.

As further evidence that the FEC is in compliance with this requirement the following excerpt from RFP99-01 issued March 15, 1999 is provided:

> (4) Any information technology utilized in the performance of this contract must be either:
>
> - Year 2000 compliant; or
> - Upgraded to be Year 2000 compliant prior to the earlier of-
>
> (i) The earliest date on which the information technology may be required to perform date/time processing involving dates later than December 31, 1999, or
>
> (ii) December 31, 1999
>
> "Year 2000 compliant" means, with respect to information technology, that the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.

[Excerpt from memorandum dated March 26, 1999] (attached)

In conclusion, current contracts are Y2K compliant. RFP's for future contracts (RFP9901 for Data Entry and RFP9902 for Information Technology) contain the proper Y2K clauses.

Page 5

Additional Comments

1) Page i., "Unresolved Y2K Issues":

"In addition, our audit work showed that the FEC has not completed all significant criteria required by published OMB directives."

It would be helpful if the OIG were to provide us with a detailed listing of all items which have not been completed per the above statement.

2) Page 12, last paragraph.

"First of all, electronic, filers are not the agency's only data exchange partners. Also, in order to successfully exchange electronic data between two computer systems, there must be a similar file format; or if not, at least a software bridge to accommodate dissimilar formats."

This sentence misinforms the reader of the nature of electronic filing. There **is** a requirement for a single file format. Filers who attempt to file data which does not strictly meet the format requirements will be swiftly rejected. These requirements, of course, include proper Y2K date formatting. The electronic filing format has been published in the Federal Register, and on the Web.

Please elaborate on the remainder of the paragraph which is confusing.

"Second, no system administrator is going to allow an outside entity to exchange data without obtaining proper access rights. Therefore, for the electronic filing process, the FEC is simply following standard procedures required under normal operating conditions and not communicating with each data exchange partner on how to fix the Y2K problem, as requested by OMB."

1) The FEC has a defined file format by which data is to be transmitted to the FEC. The FEC does NOT transfer data to the filer, therefore, the data transfer is one way: from the filer to the FEC.

2) The FEC has developed specific procedures for setting up electronic filing users.

3) As stated above the FEC has posted notices on the Web site alerting all possible electronic filing users to the Y2K issue.

OIG Response to Management's Comments on Draft Report

In its response to our draft audit report (see Appendix B), the FEC has expressed general concurrence with our audit recommendations. The FEC's response also presents recent steps that have been taken to address some of the issues raised both by OMB in its quarterly reporting, as well as from our audit. However, in management's response agency officials express the following: "*Unlike larger Agencies, the FEC does not have the personnel resources to perform many of the recommendations outlined in the report.*" We would like to point out that all of the recommendations in the audit report are supported by published OMB directives developed for small Federal agencies. Furthermore, both the Administration and Congress made additional funding available to Federal agencies requesting assistance in fixing Y2K problems. In its 8th Quarterly Report, under the section relating to small and independent agencies, OMB makes the following offer: "*For those agencies that are behind schedule, OMB will work with senior management to ensure that they will be ready*."

Although, the agency's stated corrective actions taken and planned since the issuance of the draft audit report are encouraging, much needs to be accomplished within the allotted time remaining. Of special concern in management's response is the uncertainty surrounding the scheduled late implementation of the Information Technology contract (commonly referred to as the "ADP contract," see audit recommendation #3), which provides computer services for / between the FEC and the central computer facility housing the Disclosure Database. At this time, agency officials only expect Y2K testing on that contract to be accomplished by November 30, 1999. This is much later than established government-wide milestone dates and presents a significant risk to the FEC.

In regards to management's comments on contingency planning (refer to audit recommendation #5), it is noted that the FEC has held preliminary discussions regarding this issue and a formal plan is scheduled to be developed; however, recent OMB testimony before Congress indicates that all Federal agencies are expected to submit business continuity and contingency plans by June 15, 1999. Therefore, we believe that the FEC should strongly consider the contributions and suggestions offered in Finding Number 1, of our Management Letter shown in Appendix D of this report. These suggestions include using an electronic supplied version of a benchmark comprehensive Y2K plan as the foundation for developing an FEC-wide team effort for contingency planning and staff involvement.

In audit recommendations numbers six and nine, management suggests that the OIG communicate directly with operational staff in order to resolve the respective audit recommendations. While we believe our recommendations and suggestions would enhance the agency's Y2K renovation effort, the OIG is constrained by Federal law from directing FEC operations. Guidance on the scope of the OIG can be obtained from Public Law 95-452, as amended by Title 1 of the Inspector General Act Amendments, Public Law 100-504. Furthermore, management's suggestion raises concerns whether the appointed project officials have the authority to coordinate agency-wide Y2K renovation efforts. Centralized planning and direction is crucial for large and complex agency-wide projects i.e., resolving the FEC's Y2K problem.

Addressing the verification efforts for agency renovations (refer to audit recommendation #7), management's response reiterates "*the importance of conducting an independent verification and validation of Y2K code compliance.*" Management goes on to state: "*In order to ensure independent verification, validation will be accomplished at the vendor site.*" In our audit, we recommend conducting independent verification and validation. However, while verification of code at the vendors site provides a degree of assurance that due diligence was performed by the agency in repairing programming code; it should also be pointed out that the vendor usually will not attest to the level of compliance. Consequently, the method recommended by both OMB and the GAO to ensure code compliance, as well as the reliability of other Y2K renovations including computer hardware and communication software, is through end-to-end testing of each system.

With the limited time remaining, and considering the amount of effort and coordination necessary to complete Y2K renovations at the FEC, there is a moderate degree of risk that the agency may not be ready on time.

FEDERAL ELECTION COMMISSION
WASHINGTON, D.C. 20463

MEMORANDUM

April 20, 1999

TO: Rick Hooper, Director, DSDD
Year 2000 Project Manager

FROM Lynne A. McFarland
Inspector General

SUBJECT: Management Letter, "Audit of Agency Year 2000 Renovations"
(No. 98-08)

The Office of Inspector General (OIG) has completed a Year 2000 (Y2K) audit for the Federal Election Commission (FEC), in accordance with generally accepted government auditing standards. As a result of our audit, we identified issues not included in our audit report which we believe should be addressed by management. The issues discussed in this management letter were not adverse enough to affect our overall opinion based on the objectives of the audit; however, the findings listed below may present a risk of exposure to the FEC as a result of the Y2K problem. Therefore, we present this information for your review and consideration.

Finding Number 1

The FEC has not completed an agency-wide comprehensive Y2K management plan. Among other issues, key ingredients of the plan would include agency-wide coordination for the activities of individual FEC divisions and offices.

Condition: During the audit, the Y2K project team repeatedly set deadline dates for the completion of a comprehensive Y2K management plan; however, the plan was never completed. Early in the audit, the OIG had provided the Y2K project team with an electronic draft copy of a Y2K plan developed by the Department of Education / Office of Postsecondary Education. We recommended that this plan be used as a benchmark guideline for developing the FEC Y2K management plan. In addition, we suggested sending the final version of the FEC comprehensive Y2K management plan under cover of memorandum to each division office in order to raise awareness and disseminate pertinent information regarding the Y2K project. We also suggested that the cover memorandum request the submission of contingency plans for any high level business function relying on data processed through a mission critical computer system. We feel our suggestions and contributions would

have increased an overall understanding of the problem and facilitated staff involvement helping to foster an agency-wide team effort. In addition, this type of project coordination would develop a consistent view of Y2K progress between the project team, division offices, and senior management.

Criteria: Although, published directives from the U.S. Office of Management and Budget (OMB) have not specifically required each Federal agencies to complete a comprehensive Y2K management plan, in its March 1998 Memorandum to the Head of Small Agencies, OMB does request the following: "*indicate the dates by which your agency plans to complete (or has completed) the phases of Assessment, Renovation, Validation, and Implementation for mission critical technology systems.*" The General Accounting Office (GAO) published key criteria for each of these phases in its Year 2000 Computer Crisis: An Assessment Guide, issued in September 1997. In that publication the GAO states that, "*the Year 2000 problem is not just an information technology problem, but is primarily a business problem.*" As such, GAO recommends that during the Assessment phase a Year 2000 program plan be developed, to include:

- schedules for all tasks and phases of the Year 2000 program
- master conversion and replacement schedule, including identification of systems and their components
- assessment and selection of outsourcing options
- assignment of conversion or replacement projects to Year 2000 project teams
- risk assessment
- contingency plans for all systems

Impact: Formalized planning provides for clearly communicated goals, proper allocation of resources, establishes work programs, and provides assurance that a change in program staff will not adversely impact agency-wide Y2K readiness. Documented project plans and schedules establish the critical path that must be strictly followed in order to resolve a complex problem on time and on budget. It enables management to compare planned versus actual results. Without effective comprehensive planning, the Y2K project team may be unable to properly monitor risk, track progress, and report project metrics. This increases the possibility that FEC computer systems will not be ready for January 1, 2000.

Suggestions: We suggest that the FEC: 1) immediately complete and distribute the agency-wide comprehensive Y2K management plan, and 2) establish timely delivery dates for receiving crucial information from the division offices regarding Y2K preparations.

Finding Number 2

Documentation of renovated changes to the agency's computer programming code are necessary in order to adequately manage and validate the agency's Y2K conversion effort. For example, agency efforts to identify date fields and repair programming code should be compared to results received from independent verification and validation.

Condition: Y2K conversions have been made without the programmer documenting the changes made to the programming code. The FEC has reported it is using a "windowing" technique for Y2K code renovations. Windowing logic introduces additional programming code branches and paths. Standard project management techniques were not followed to ensure that Y2K changes to the agency mission critical computer systems were recorded for future reference.

Criteria: Again, OMB has not specifically directed the agency to document conversion efforts; however, in its Year 2000 Computer Crisis: An Assessment Guide, the GAO recommends the following: "*Implement and use configuration management procedures to ensure that all changes to information systems and their components are properly documented and managed.*"

Impact: Even the most effective windowing solutions are by nature patches of code which must be taken into account in any new enhancement. In addition, there is ambiguity in 2-digit year windowing logic which comes in different formats, fixed or sliding, or a combination of the two. The format must remain consistent across each application. Future programmers may lose the ability to maintain these renovated application programs without good documentation. Furthermore, documentation of Y2K renovations will be required for developing effective technical contingency plans. Technical contingency planning to repair defects quickly and reliably is crucial for minimizing cost and also an important component of due diligence.[1]

Suggestions: The FEC should develop and follow standardized procedures requiring documentation for any and all program software changes. For the Y2K project, documentation should at least identify the types of changes made in the programs, the location of the changes or new code, the location of bridge programs and the technique being used to convert dates between files, applications, and data exchanges.[2] We suggest that the Y2K project team document all changes to the software programs. Since the programmers have completed the Y2K renovation work, they should begin preparing this documentation immediately.

If the above conditions are adequately addressed, along with the specific recommendations contained in our subject audit report, we believe that the FEC will reduce its exposure to the Y2K problem. If you have any questions or require additional information, please call me or Steve Lachenmyer of my staff on 694-1019.

cc: Jim Pehrkon
Staff Director

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[1] "Moving Through and Beyond Jan. 1, 2000 - Minimize Risk and Plan Ahead" article by Dr. Johnson M. Hart, published in the Jan/Feb 1999 issue of the Year/2000 Journal.
[2] "Prompt Actions Needed to Meet the Year 2000 Deadline" Audit Report No. 99-CAO-01, issued by the Office of Inspector General / U.S. House of Representatives, dated January 8, 1999.

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